



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,906	09/30/2003	Jason MacNeal	AVX-236	9002
22827	7590	03/18/2005	EXAMINER	
DORITY & MANNING, P.A. POST OFFICE BOX 1449 GREENVILLE, SC 29602-1449			THOMAS, ERIC W	
			ART UNIT	PAPER NUMBER
			2831	

DATE MAILED: 03/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/674,906

Applicant(s)

MACNEAL ET AL.

Examiner

Eric W. Thomas

Art Unit

2831

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-5, 11, 15-18, 22-26, 31 is/are rejected.
- 7) ☒ Claim(s) 2, 6-10, 12-14, 19-21, 27-30 and 32-34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2831

INTRODUCTION

The examiner acknowledges, as recommended in the MPEP, the applicant's submission of the amendment dated 12/28/04. At this point, claims 1, 11, 15, 16, 31, 33 have been amended. Claims 1-34 are pending in the instant application.

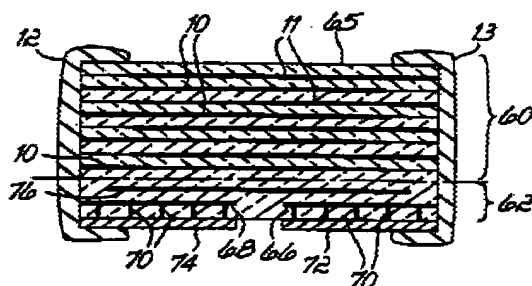
Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 5, 11, 23, 26, 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Devoe et al (US 6,587,327).



Devoe et al. disclose in fig. 9A, a multilayer electronic device, comprising: a plurality of dielectric layers; a plurality of electrode layers (10,11) interleaved with selected of said plurality of dielectric layers to form a multilayered arrangement, wherein each said electrode layer (10, 11) extends to and is exposed along at least one side surface of the multilayered arrangement; said multilayered arrangement defined by first

Art Unit: 2831

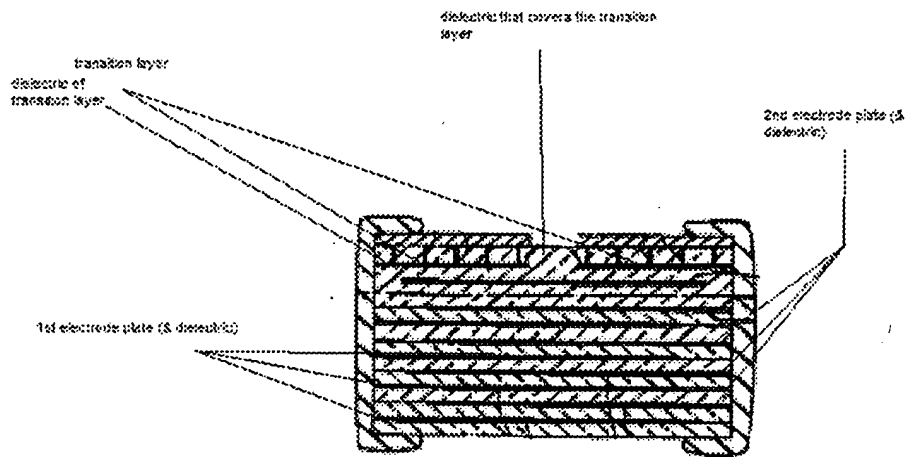
and second opposing surfaces and a plurality of side surfaces; at least one respective first (68) and second (66) transition layer electrode portion provided on the first surface of said multilayered arrangement; a cover layer (lower most ceramic layer) provided over said at least one respective first and second transition layer electrode portion, said cover layer formed to define a plurality of openings there through for exposing a portion of said at least one respective first and second transition layer electrode portions; at least one first peripheral termination formed along selected side surfaces of the multilayered arrangement and electrically connecting selected of said electrode layers and said at least one first transition layer electrode portion; and at least one second peripheral termination formed along selected side surfaces of the multilayered arrangement and electrically connecting selected of said electrode layers and said at least one second transition layer electrode portion.

Regarding claim 5, Devoe et al. disclose a plurality of via termination formed in the openings defined by the covering.

Regarding claim 11, Devoe et al. disclose said at least one first and second peripheral terminations extend along a substantially entire dimension of a respective selected side surface of the multilayer electronic device and wrap around to at least one side surface adjacent to said respective selected side surface.

Regarding claim 22, Devoe et al. disclose said at least one first and second peripheral terminations extend along a substantially entire dimension of a respective selected side surface of the multilayer electronic device and wrap around to at least one surface adjacent to said respective selected side surface.

Art Unit: 2831



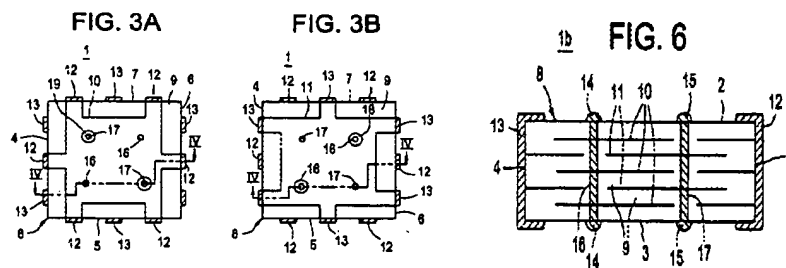
Regarding claim 23, Devoe et al. disclose a multilayer capacitor, comprising: a plurality of first layers (11 & dielectric), each first layer having a sheet of dielectric material delimited laterally by edges and partially covered by a first electrode plate; a plurality of second layers, each second layer (10 & dielectric) having a sheet of dielectric material delimited laterally by edges and partially covered by a second electrode plate; said first and second layers alternately stacked in a multilayered assembly such that adjacent first and second electrode plates form opposing capacitor plates, said multilayered assembly characterized by first and second opposing surfaces and a plurality of side surfaces; a transition layer (66,68 & dielectric) comprising a sheet of dielectric material and at least one respective first (66) and second (68) transition layer electrode portion provided on the sheet of dielectric material, said transition layer provided on the first surface of said multilayered assembly; and a cover layer provided over said transition layer, said cover layer formed to define a plurality of openings there through for exposing a portion of said at least one respective first and second transition layer electrode portions; wherein said first electrode plates and said at least one first

transition layer electrode portion are exposed along selected side surfaces of the multilayered assembly in at least one substantially linear alignment such that said first electrode plates and said at least one first transition layer electrode portion are connected by at least one first peripheral termination (13); and wherein said second electrode plates and said at least one second transition layer electrode portion are exposed along selected side surfaces of the multilayered assembly in at least one substantially linear alignment such that said second electrode plates and said at least one second transition layer electrode portion are connected by at least one second peripheral termination (12).

Regarding claim 26, Devoe et al. disclose a plurality of via terminations formed in the openings defined by the cover layer.

Regarding claim 31, Devoe et al. disclose the at least one first and second peripheral terminations extend along a substantially surface of the multilayer capacitor and wrap around to at least one surface adjacent to the said respective selected side surface.

3. Claims 15-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Kuroda et al. (US 6,594,136).



Kuroda et al. disclose in fig. 3A, 3B, 4, 9, a multilayer capacitor, comprising: a plurality of dielectric layers (9); respective pluralities of first (10) and second (11) electrode layers interleaved with selected of said plurality of dielectric layers to form a multilayered assembly, said multilayered assembly defined by topmost and bottommost layers and a plurality of adjacent side surfaces; at least one first via termination (16) provided through the topmost layer of said multilayered assembly and **electrically connected** to an electrode tab of one of said first electrode layers; at least one second (17) via termination provided through the topmost layer of said multilayered assembly and **electrically connected** to an electrode tab of one of said second electrode layers; at least one first peripheral termination (13) provided along selected side surfaces of said multilayered assembly and electrically connecting said plurality of first electrode layers; and at least one second peripheral termination (12) provided along selected side surfaces of said multilayered assembly and electrically connecting said plurality second electrode layers.

Regarding claim 16, Kuroda et al. disclose each of said plurality of first electrode layers respectively includes a plurality of electrode tabs extending to and exposed along selected side surfaces of said multilayered assembly, wherein said at least one first peripheral termination electrically connects selected electrode tabs from the plurality of first electrode layers, and wherein said at least one second peripheral termination electrically connects selected electrode tabs from the plurality of second electrode layers.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroda et al. (US 6,594,136).

Regarding claim 17, Kuroda et al. disclose the claimed invention except for the bottommost layer of the multilayer assembly comprise multiple pf the plurality of dielectric layers. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form multiple dielectric layers on the bottommost layer of the multilayer assembly, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 3 USPQ 8.

Regarding claim 18, Kuroda et al. disclose the claimed invention except for a plurality of solder balls connected to the at least one first via termination and to the at least one second via termination. It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the via terminal from a solder material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

7. Claims 3-4, and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Devoe et al (US 6,587,327).

Regarding claims 3 & 24, Devoe et al. disclose the claimed invention except for the at least one respective first and second transition layer electrode portions are generally U-shaped or rectangular-shaped. It would have been an obvious matter of design choice to form the first and second transition layer electrode portions to have a rectangular-shape, since such a modification would have involved a mere change in the shape of a component, a change of shape is generally recognized as being within the level of ordinary skill in the art. *Span-Deck Inc. V. FabCon, Inc.*, 215 USPQ 835.

Regarding claims 4, & 25, Devoe et al. disclose the claimed invention except for the second surface of the multilayered arrangement comprises multiple of the plurality of dielectric layers.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to form multiple dielectric layers on the second surface of the multilayer assembly, since it has been held that mere duplication of the essential

Art Unit: 2831

working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 3 USPQ 8.

Response to Arguments

8. Applicant's arguments filed 12/28/04 have been fully considered but they are not persuasive.

l) Devoe et al. fail to disclose all elements of claim 1, including the provision of at least one respective first and second transition layer electrode portion on the first surface of the multilayered arrangement and the provision of each electrode layer as extending to and exposed along at least one side surface of the multilayered arrangement.

A) (Devoe et al. do not disclose each of the electrode layer extends to and is exposed along a selected side surface of the multilayered arrangement.

Floating interior plate 76 does clearly does not extend to a side surface of the configuration in Devoe et al.) The examiner does not agree. The examiner does not define "the plurality of electrode layers (10, 11) wherein each said electrode layer (10,11) extends to and is exposed along a selected side surface of the multilayer arrangement" to include the floating interior plate (76).

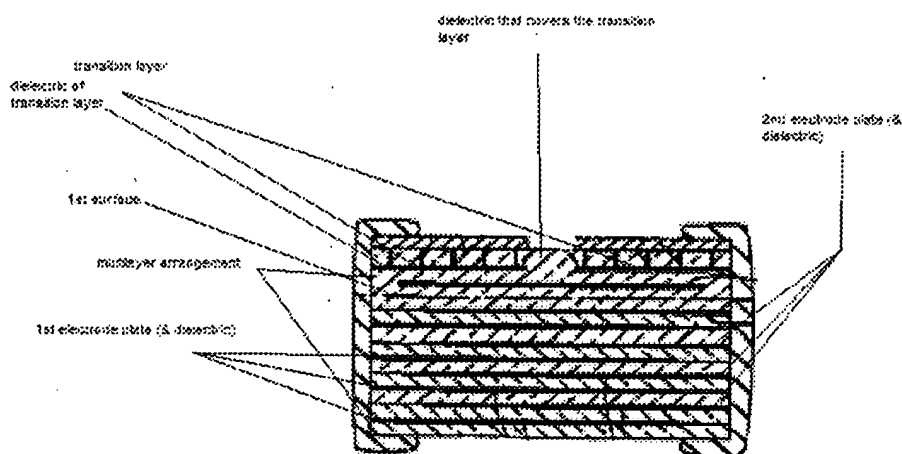
MPEP 2111.03 [R-2]: "The transitional phrases "comprising", "consisting essentially of" and "consisting of" define the scope of a claim with respect to what unrecited additional components or steps, if any, are excluded from the scope of the claim.

The transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g., > *Invitrogen Corp. v. Biocrest Mfg., L.P.*, 327 F.3d 1364, 1368, 66 USPQ2d 1631, 1634 (Fed. Cir. 2003) ("The transition comprising' in a method claim indicates that the claim is open-ended and allows for additional steps."); < *Genentech, Inc. v. Chiron Corp.*, 112 F.3d 495, 501, 42 USPQ2d 1608, 1613 (Fed. Cir. 1997) ("**Comprising**" is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim.); *Moleculon Research Corp. v. CBS, Inc.*, 793 F.2d 1261, 229 USPQ 805 (Fed. Cir. 1986); *In re Baxter*, 656 F.2d 679, 686, 210 USPQ 795, 803 (CCPA 1981); *Ex parte Davis*, 80 USPQ 448, 450 (Bd. App. 1948) ("comprising" leaves "the claim open for the inclusion of unspecified ingredients even in major amounts"). The

Art Unit: 2831

transitional phrase "consisting of" excludes any element, step, or ingredient not specified in the claim. In re Gray, 53 F.2d 520, 11 USPQ 255 (CCPA 1931); Ex parte Davis, 80 USPQ 448, 450 (Bd. App. 1948) ("consisting of" defined as "closing the claim to the inclusion of materials other than those recited except for impurities ordinarily associated therewith."). >But see Norian Corp. v. Stryker Corp., 363 F.3d 1321, 1331-32, 70 USPQ2d 1508, 1516 (Fed. Cir. 2004) (holding that a bone repair kit "consisting of" claimed chemicals was infringed by a bone repair kit including a spatula in addition to the claimed chemicals because the presence of the spatula was unrelated to the claimed invention). < A claim which depends from a claim which "consists of" the recited elements or steps cannot add an element or step. When the phrase "consists of" appears in a clause of the body of a claim, rather than immediately following the preamble, it limits only the element set forth in that clause; other elements are not excluded from the claim as a whole. Mannesmann Demag Corp. v. Engineered Metal Products Co., 793 F.2d 1279, 230 USPQ 45 (Fed. Cir. 1986). The transitional phrase "consisting essentially of" limits the scope of a claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention. In re Herz, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976) (emphasis in original) (Prior art hydraulic fluid required a dispersant which appellants argued was excluded from claims limited to a functional fluid "consisting essentially of" certain components. In finding the claims did not exclude the prior art dispersant, the court noted that appellants' specification indicated the claimed composition can contain any well-known additive such as a dispersant, and there was no evidence that the presence of a dispersant would materially affect the basic and novel characteristic of the claimed invention. The prior art composition had the same basic and novel characteristic (increased oxidation resistance) as well as additional enhanced detergent and dispersant characteristics.). "A consisting essentially of" claim occupies a middle ground between closed claims that are written in a consisting of format and fully open claims that are drafted in a comprising format." PPG Industries v. Guardian Industries, 156 F.3d 1351, 1354, 48 USPQ2d 1351, 1353-54 (Fed. Cir. 1998). See also Atlas Powder v. E.I. duPont de Nemours & Co., 750 F.2d 1569, 224 USPQ 409 (Fed. Cir. 1984); In re Janakirama-Rao, 317 F.2d 951, 137 USPQ 893 (CCPA 1963); Water Technologies Corp. vs. Calco, Ltd., 850 F.2d 660, 7 USPQ2d 1097 (Fed. Cir. 1988).

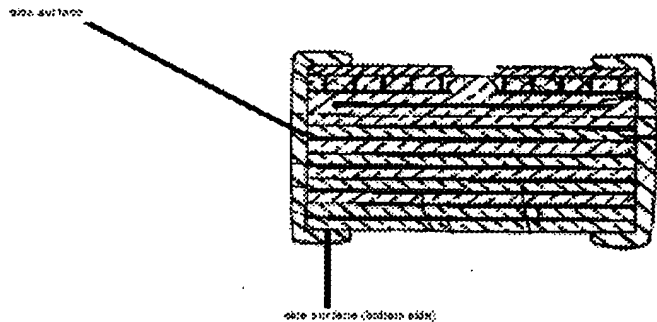
B) (Devoe et al. do not disclose providing first and second transition layer electrode portions on the first surface of the multilayered arrangement) The examiner does not agree (see illustration below). The transition layer is formed on the first surface of the multilayered arrangement.



C) Devoe et al. do not disclose the at least one first and second peripheral terminations extend along an entire dimension of a respective selected side

Art Unit: 2831

surface of the multilayer device and wrap around to at least one side surface adjacent to the respective selected side surfaces. The examiner does not agree. Devoe et al. disclose the peripheral terminations extend along the entire left/right sides and wraps around the bottom side surfaces (see fig. below).



II) Kuroda et al. fail to disclose first and second via terminations that connect to respective electrode tabs extending to and exposed along selected side surfaces of the device.

A) The examiner does not agree. It appears applicant is arguing that the via terminations directly connect to an electrode tab of respective first and second electrode layer. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., the first and second via terminations are directly connected to respective electrode tabs of the first and second electrodes) are not recited in the rejected claim(s). It should be noted that applicant is claiming "at least one first via termination provided through the topmost layer of the multilayer assembly and **electrically connected** to an electrode tab of said first electrode

Art Unit: 2831

layers; and at least one second via termination provided through the topmost layer of the multilayered assembly and **electrically connected** to an electrode tab of one said second electrode layers” Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

9. Applicant’s arguments, see page 19-20, filed 12/28/04, with respect to claims 10, 30 have been fully considered and are persuasive. The rejection of claims 10, and 30 has been withdrawn.

Allowable Subject Matter

Claims 2, 6-9, 10, 12-14, 19-21, 27-29, 30, 32-34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach or fairly suggest (taken in combination with the other claimed features) a multilayer electronic device wherein selected of the electrode layers and said at least one respective first and second transition layer electrode portions comprise ruthenium oxide (claims 10, 30); and selected of said first and second electrode layers comprise ruthenium oxide (claim 21).

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric W. Thomas whose telephone number is 571-272-1985. The examiner can normally be reached on Monday - Friday 5:30 AM - 2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 571-272-1984. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2831

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 3/10/05

ERIC W. THOMAS
PRIMARY EXAMINER

ewt